THE AFRICAN SPECIES OF THE GENUS PARDOMIMA WARREN

(LEPIDOPTERA: PYRALIDAE: PYRAUSTINAE)

EDWARD L. MARTIN

Pp. 503-521; Pl. 23; 43 Text-figures

BULLETIN OF

THE BRITISH MUSEUM (NATURAL HISTORY)

ENTOMOLOGY Vol. 3 No. 14

LONDON: 1955

THE BULLETIN OF THE BRITISH MUSEUM (NATURAL HISTORY), instituted in 1949, is issued in five series corresponding to the Departments of the Museum, and an Historical Series.

Parts will appear at irregular intervals as they become ready. Volumes will contain about three or four hundred pages, and will not necessarily be completed within one calendar year.

This paper is Vol. 3, No. 14 of the Entomological series.

THE AFRICAN SPECIES OF THE GENUS PARDOMIMA WARREN

(LEPIDOPTERA: PYRALIDAE: PYRAUSTINAE)

By EDWARD L. MARTIN,

SYNOPSIS

Twelve African species of *Pardomima* are here described, included in two subgenera; six of the species and one subgenus are described as new.

HITHERTO a number of African Pyraustinae have been confused under the omnibus name "Lygropia amyntusalis Walker," a species confined to the Indo-Malayan region. With others described in various genera, such as Lamprosema, Sylepta and Entephria, these species form a compact group, here brought together under the genus Pardomima Warren, of which P. amyntusalis is the type species. Various authors have previously drawn attention to the remarkable "mimicry" existing between the species; this undoubtedly close resemblance is perhaps less remarkable between congeneric species with the same basic pattern of markings.

For the purposes of the present paper, about six hundred specimens have been examined and about sixty preparations of genitalia made. My thanks are due to Professor E. M. Hering for the loan of the type of P. distortana Strand, and several other specimens from the Zoologisches Museum der Humboldt-Universität, Berlin; to Dr. Elli Franz of the Senckenbergische Naturforschende Gesellschaft, Frankfurtam-Main, for the loan of type material of P. testudinalis Saalmüller; to Monsieur L. A. Berger for the loan of P. phalarota Meyrick, P. phalaromima Meyrick, P. empalacta Meyrick, and a large number of other specimens from the Musée du Congo Belge, Tervuren; to Monsieur P. Viette for the loan of specimens from the Muséum National d'Histoire Naturelle, Paris; to Mr. Elliot Pinhey for the loan of specimens from the Coryndon Museum, Nairobi; and especially to Monsieur E. Janmoulle, who has been most helpful in searching for material in the Musée du Congo Belge and has made helpful suggestions.

PARDOMIMA Warren

Pardomima Warren, 1890. Ann. Mag. nat. Hist. (6) 6:477.

Type species: Botys amyntusalis Walker (original designation).

Frons bluntly rounded, not prominent, with ochreous-yellow to orange-yellow scales. Vertex with yellowish or fuscous scales. Labial palpus upcurved, first segment half of second, third two-fifths length of second, apex blunt (half length of second, slender, pointed, in *phalaromima*), third segment and oblique upper half of second fuscous-scaled. Maxillary palpus small, slender, pointed, ascending, tip

ENTOM. III, 14.

usually with fuscous scales. Proboscis well-developed, with light-coloured scales at base (fuscous in *phaeoparda* and in some specimens of *phalaromima*). Antenna minutely ciliate, segments of distal two-thirds with two slender spines, equal in length to that of the segment bearing them, medial segments with additional smaller spines. Ocelli present. Thorax and tegulae with a variable number of fuscous spots, sometimes enlarged so as to eliminate lighter markings. Legs whitish or yellowish; fore-tibia with a fuscous band, slightly dilated, bearing a ventral pointed flap concealed by scaling; tibial spurs 0, 2, 4; in subgenus *Pachyparda* mid-femur of male enlarged, containing a cavity filled with hairs. Abdomen similar in colour to the ground colour of the wings, often tinged with orange or suffused with fuscous; typically with two fuscous spots on first tergum, three triangular spots on second tergum, sometimes confluent, darker scaling on seventh tergum, and eighth segment of male fuscous with a conspicuous white or ochreous yellow lateral streak; posterior margin of terga often bordered with shining-white scales.

Fore wing with costa straight, convex before apex; termen oblique, especially in male, usually convex above tornus. R_3 and R_4 stalked for about half their length, R_4 to apex, R_5 approximated to R_{3+4} near base, Cu_{1b} from five-sixths, A_3 curved to form anal loop. Hind wing subtriangular; frenulum fused (simple) in the male, composed of two spines in the female; Sc and Rs anastomosing for a short distance

beyond cell, Rs weak near base, Cu₂ weak, A₃ to tornus.

Type of markings: Ground colour whitish-yellow to yellowish-orange, markings light or dark fuscous. Fore-wing often with a yellowish-orange costal streak; two basal dots on costa, a similar dot on dorsum, which, with the outermost costal dot, may fuse to form a basal line; antemedial line at one-quarter, curved, centre of arc at base of wing; a discal dot immediately distad of antemedial line and sometimes joined to it; discal blotch hollow, somewhat 8-shaped; postmedial line sharply angulate, from dorsum parallel with termen to lower margin of discal blotch (first segment), whence it proceeds to above tornus (second segment), where it is again directed parallel with termen to M2 (third segment), stepped slightly basad at M2 reaching costa at three-quarters (fourth segment); a thin terminal line from apex to tornus, expanded above tornus to meet second angle of postmedial line, expanded below apex towards, or reaching, post-medial line between M₁ and M₂. Hindwing with antemedial line almost straight, from below costa at one-third to dorsum above tornus, furcate below costa; postmedial line from below costa at two-thirds to M2, where it is stepped slightly distad, reaching termen above tornus, where it is expanded on reaching terminal line forming a tornal patch; terminal line expanded from apex to M, where it may extend to postmedial line.

d genitalia: Uncus slender, dilated and spinose at apex; gnathos absent; juxta spatulate; tegumen slightly curved at base, not produced; valva somewhat variable in shape, tapering towards apex, typically with a basal, apical and costal tuft of short hairs, and a row of submarginal spines near apex, inner surface sometimes with a medial projection above the inner margin, costa of valva strong, often twisted, at a distance from the costal margin, costae connected by brassière-shaped transtillae; sacculus with a short inner projection. Aedoeagus usually with a variable number of cornuti, which are often thorn-shaped; coremata often well-developed, typically

composed of an inner pair of tufts with simple scales and an outer pair of larger tufts often containing compound scales (composed of a large number of simple scales fused for the whole, or greater part, of their length.

♀ genitalia: Ductus bursae variously sclerotized, often with protuberances; bursa copulatrix typically with a crescentic denticulate signum.

BIOLOGY.—Virtually unknown; the only record available refers to the larva of "Lygropia amyntusalis" feeding on the leaves of coffee (Hargreaves, 1928, Ann. Rep. Dept. Agric. Uganda 1927: 34). The record may refer to *P. zanclophora*, but at present the point cannot be decided.

DISTRIBUTION.—Ethiopian region (including Madagascar), Indo-Malayan and Australasian regions.

The species can be easily distinguished superficially from all other Pyraustinae by the pattern of markings alone. In order to avoid repetition, the basic pattern of the markings has been given in the generic description, and diagnostic features only are given in the specific descriptions. Owing to the similarity in markings and the great variation in many of the species a key to species based on superficial characters is not given; most specimens may however be easily recognized from the photographic illustrations. In case of doubt recourse should be had to the genitalia, the chief diagnostic features of which are given for each species.

The genus is not closely related to Syllepte (type species: S. incomptalis Hübner) or Lygropia (type species: Asopia unicoloralis Guenée), with which many of its species have been associated. Both these genera possess a broad uncus in the male, tapering towards an apex which does not bear close-set spines. As suggested by Warren, the genus is allied to Arthromastix Warren (type species: Salbia lauralis Walker) and Nothomastix Warren (type species: Botys chromalis Walker) from which it may be distinguished by the non-specialized antennae of the male and the different pattern of wing-markings. The genus Pardomima is readily divisible into two subgenera, the characters of which are given under those headings.

KEY TO SPECIES BASED ON THE MALE GENITALIA

I.	. Costal margin of valva with protuberance(s) (subgen. Pachyt	arda)	IO.
	Costal margin of valva without protuberances (subgen. Pardon	nima)	2.
2.	. Coremata with conspicuous, dark, compound, scales		3.
	Coremata without such scales		6.
3.	. Inner surface of valva with slender projection		4.
			5.
4.	. Costal margin of valva strongly arched near base	haeopar	da.
	Costal margin of valva not so arched	telaneps	sia.
5.	. Aedoeagus with sickle-shaped cornutus	anclopho	ra.
	Aedoeagus with an apical bunch of slender cornuti	azan	cla.
6.	. Apex of valva more or less pointed		7.
	Apex of valva bluntly rounded		9.
7.	. Aedoeagus with a single bunch of cornuti situated apically	iurcirena	lis.
	Aedoeagus with cornuti not so situated	•	8.
8.	. Inner surface of valva with angular projections	estudina	lis.
	Inner surface of valva without projections	callixant	ha.
9.	. Aedoeagus with two cornuti	phalaro	ta.
	Aedoeagus without distinct cornutus	halaromi	ma

10. Costal ma	argin of valva	with two slender projections near apex .	. distortana.
Costal ma	argin of valva	without such projections	II.
11. Costal ma	argin of valva	with large rounded protuberance at two-thirds	. tumidipes.
Costal ma	argin of valva	without such protuberance	margarodes.

Subgenus Pardomima Warren

Mid-femur of male not enlarged, without cavity; valva of male with costal margin smoothly rounded, without protuberances; coremata with or without compound scales; bursa copulatrix of female almost always with a crescent-shaped signum. Typical markings of abdomen well-developed, pale lateral streak on eighth segment of male conspicuous.

Pardomima (Pardomima) furcirenalis (Hampson)

(Text-figs. 1, 2, 23; Plate 23, fig. 1)

Lamprosema furcirenalis Hampson, 1918. Ann. Mag. nat. Hist. (9) 1: 257. Lamprosema furcirenalis Hampson, Klima, 1939. Lepidopterorum Catalogus 89: 168.

Characterized by the restricted distribution and diffuse nature of the secondary markings.

 \mathcal{S} , \mathcal{Q} 17–18 mm., secondary markings not prominent, merging into ground colour. Forewing without basal line; antemedial line furcate below costa, distal branch representing the obliquely-placed discal dot; discal blotch open towards dorsum, not connected with postmedial line; antemedial and postmedial lines slightly convergent towards dorsum, not connected along dorsum by fuscous markings; postmedial line with second segment obsolescent, second angle connected to tornus by a pale yellowish-fuscous suffusion; terminal line slightly enlarged on veins, enlarged towards costa forming a pale yellowish-fuscous suffusion reaching postmedial line between M_1 and M_2 . Hindwings with tornal suffusion indistinct, sometimes extending slightly towards antemedial line; terminal line and suffusion as in forewings.

d genitalia: Valva bluntly pointed; aedoeagus with an apical group of small cornuti, rather similar to amyntusalis; coremata reduced to a few slender scales.

♀ genitalia: Ductus bursae slightly enlarged and sclerotized near ostium bursae; signum absent.

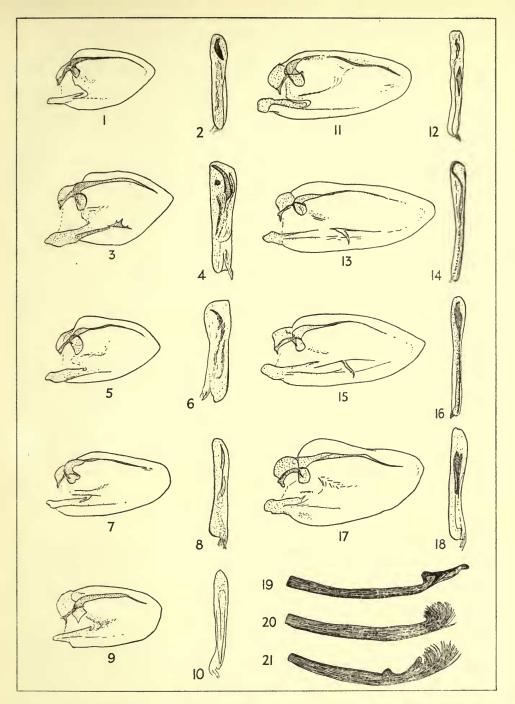
DISTRIBUTION. Union of S. Africa, Natal and Cape Province.

MATERIAL EXAMINED. BRITISH MUSEUM (NATURAL HISTORY): Holotype ♀, Bedford, S. Africa, Weale; 3♀, Verulam, Natal, Spiller; 2♂, 1♀, Natal, A. J. Spiller; 1♀, Natal, Bond's Drift, Tugela R., iii–iv, 1902, E. Reynolds; 1♀, Transkei, Cape Colony, Miss Barrett.

Pardomima (Pardomima) testudinalis (Saalmüller)

(Text-figs. 3, 4, 22; Plate 23, fig. 2)

Glyphodes? testudinalis Saalmüller, 1880. Ber. senchenb. naturf. Ges. 1879–1880: 297. Glyphodes? testudinalis Saalmüller, Saalmüller 1884. Lepidopteren von Madagascar: 506. Lygropia amyntusalis Walker, Hampson 1899. Proc. zool. Soc. Lond. 1898: 728 (partim). Lygropia amyntusalis Walker, Klima 1939. Lepidopterorum Catalogus 94: 22 (partim).



Figs. 1–21. Pardomima (Pardomima): Male genitalia. 1. P. furcirenalis Hampson, valva. 2. P. furcirenalis Hampson, aedoeagus. 3. P. testudinalis Saalmüller, valva. 4. P. testudinalis Saalmüller, aedoeagus. 5. P. callixantha sp. n., valva. 6. P. callixantha sp. n., aedoeagus. 7. P. phalarota Meyrick, valva. 8. P. phalarota Meyrick, aedoeagus. 9. P. phalaromima Meyrick, valva. 10. P. phalaromima Meyrick, aedoeagus. 11. P. telanepsia sp. n., valva. 12. P. telanepsia sp. n., aedoeagus. 13. P. zanclophora sp. n., valva. 14. P. zanclophora sp. n., aedoeagus. 15. P. azancla sp. n., valva. 16. P. azancla sp. n., aedoeagus. 17. P. phaeoparda sp. n., valva. 18. P. phaeoparda sp. n., aedoeagus. 19. P. telanepsia sp. n., coremata scale. 20. P. zanclophora sp. n., coremata scale. 21. P. phaeoparda sp. n., coremata scale. All figures × 15.

Very closely allied to *callixantha*, from which it is readily distinguished by the broad antemedial line of the hindwings.

 \circlearrowleft , \Q 22–24 mm. Forewing with basal dots separate; antemedial line evenly curved; discal dot separate, or attached to antemedial line; first segment of post-medial line broad, forming, with the discal blotch, a distinct medial fascia, connected to antemedial line by a fuscous suffusion on dorsum, remainder of line more slender; terminal line expanded towards costa, extending towards, but not reaching, post-medial line between M_1 and M_2 . Hindwings with antemedial line very broad, more than twice width of third segment of postmedial line of forewings; postmedial line obsolescent towards tornus; terminal line expanded slightly from tornus to divergence of postmedial line, expanded at apex to form a sub-triangular patch.

d genitalia: Uncus with a shallow V-shaped cleft at apex; valva bluntly pointed, inner surface armed with two triangular sclerotized projections, from the larger of

which arises a similar projection; coremata of slender scales of uniform size.

♀ genitalia: Ductus bursae sclerotized towards ostium bursae, bearing a rounded flap-like projection and an angular shoulder, from which point it is constricted to the ostium; signum very slightly curved.

DISTRIBUTION. Recorded only from N.W. Madagascar.

Material examined. British Museum (Natural History): 13, Diego Suarez, 23 April 1917, G. Melou; 12, Diego Suarez, March 1917, G. Melou. Senckenbergische Naturforschende Gesellschaft (Saalmüller collection): 23, 12 syntypes, Nossi-Bé, one male bearing a label inscribed 66; 12, Loucoubé, Ebenau, 80.

TYPE MATERIAL. The label "66", carried by one of the syntypes gives the species number of the original description; this specimen is here designated the *lectotype*, the two other specimens becoming paralectotypes. All specimens are in the collection of the Senckenbergische Naturforschende Gesellschaft, Frankfurtam-Main.

Pardomima (Pardomima) callixantha sp. n.

(Text-figs. 5, 6, 24; Plate 23, fig 3)

Lygropia amyntusalis Walker, Klima, 1939. Lepidopterorum Catalogus 94: 227 (partim). Lygropia amyntusalis Walker, Ghesquière, 1942. Ann. Mus. Congo belge C (3[2]) 7 (2): 139–140 (partim).

Very closely allied to the preceding species, from which it is readily distinguished

by the much narrower antemedial line of the hindwings.

 $\ref{constraints}$ 22–24 mm., \cPen{P} 20–22 mm. Differs from testudinalis as follows: Width of antemedial line of hindwings below furcation not exceeding width of third segment of postmedial line of forewings; terminal suffusion of forewings almost always reaching postmedial line between M_1 and M_2 ; tornal patch of hindwings, when present, triangular.

d genitalia: Valva with length slightly exceeding breadth, bluntly pointed, inner surface without projections; aedoeagus broad, with three groups of stout cornuti: coremata as in *testudinalis*.

♀ genitalia: Very similar to testudinalis; ductus bursae without rounded flap-like projection.

DISTRIBUTION. Gold Coast; Nigeria; French West Africa; French Equatorial Africa; Belgian Congo; Angola; Northern and Southern Rhodesia; Transvaal;

Cape Province; Natal; Nyasaland; Kenya, and Ethiopia.

Cape Province; Natal; Nyasaland; Kenya, and Ethiopia.

MATERIAL EXAMINED. BRITISH MUSEUM (NATURAL HISTORY): Holotype &,
Mpeta, Loangwa R., affl. of Zambesi, xi, xii. 1895, B. of rainys., Coryndon; Allotype &,
Mashonaland, Salisbury, Feb. 1904, G. A. K. Marshall; 2\$\paratypes, Mashonaland,
Salisbury, 20.iii. 1898, April 1901, G. A. K. Marshall; 1\$\delta\$, N. Rhodesia, Fort Jameson,
Phipps; 2\$\delta\$, 1\$\paraty\$, Weenen, Natal; 3\$\delta\$, 1\$\paraty\$, Natal, Spiller; 1\$\delta\$, 1\$\paraty\$, Verulam, Natal,
Spiller; 1\$\paraty\$, Pinetown, Natal, i.1909; 1\$\delta\$, Transvaal, Waterberg Dist., 1.iii. 1899, Zutizencka; 19, Pretoria, 13.xi.1906, A. J. T. Janse; 13, Port St. Johns, W. Pondoland, 1915, H. H. Swinney; 23, Nyasaland, Mt. Mlanje, 16.v., 27.x.1913, S. A. Neave; 19, Kedai, Kenya, 9 Jan. 1912, Feather; 29, Kibwesi, B.E.A., 23 April, 1922; 13 Marago ya Fundi, 4.iii.1891, C. S. Betton; 23, Tambura, Southern Bahr-el-Ghazal; 13, Abyssinia, Dulla, Kaffa, 5,000 ft., 13.vi.1905, Ph. C. Zaphiro; 23, Elisabethville, Belgian Congo, 12.i.1933, C. S.; 13, Talala, Benguella, 1 Dec. 1905, Dr. Ansorge; 13, Warringo R., Unyoro, 11.xii.1897, Dr. Ansorge; 12, Gamba, Bihé, Angola, Dec. 1934, R. Braun; 12, Lagos, W. Africa; 12, Nsuaem, Gold C., Jan. 1922, N. E. Bell; 13, Ivory Coast, Beoumi, xii.1922-i.1923, W. P. Lowe & H. R. Hardy. Muséum National d'Histoire Naturelle, Paris: 13 paratype, Angola, entre Capelongo et Dougo, 27.xii.1912; 13, Soudan français, Bamako. Musée du Congo Belge, Tervuren: 13, 19 paratype, Elisabethville, 22.ix.1950, xi.1948, Ch. Seydel; 63, 19, Elisabethville, 26.iv.1933, 26.iii.1936, 4.xii.1936, i.1938, 21.ii.1948, xii.1948, xi.1949, Ch. Seydel; 13, Lubumbashi, 31.iv.1934, Ch. Seydel. Coryndon Museum, Nairobi: 13 paratype, Chiwefwe, N. Rhodesia, Feb. 1950, N. Mitton; 13, Broken Hill, N. Rhodesia, Feb. 1950, N. Mitton; 12, North Kibwesi, Kenya, 3,000 ft., Jan. 1950, J. G. Williams; 12, Isiolo, K. C., Apr.-May 1951, Mrs. Adamson.

Pardomima (Pardomima) phalarota (Meyrick)

(Text-figs. 7, 8, 25; Plate 23, figs. 6, 7)

Lygropia phalarota Meyrick, 1933. Exotic Microlepidoptera 4: 404-405. Lygropia phalarota Meyrick, Klima, 1939. Lepidopterorum Catalogus 94: 229. Dichocrocis phalarota Meyrick, Ghesquière, 1942. Ann. Mus. Congo belge C. (3[2]) 7 (2): 140-141 (partim).

A very variable species; more lightly marked specimens resemble *callixantha*, from which they may be distinguished by the absence of chequered cilia; darker specimens resemble *phalaromima* but the third joint of the labial palpi is much shorter. In the original description the month should read "February", not "November".

3, \$ 19-23 mm., development of secondary markings variable. Forewing with basal dots separate, or forming a basal line; antemedial line somewhat broader towards costa; discal dot variable in size, not connected to antemedial line, sometimes connected along cubitus to lower edge of discal blotch; in some specimens (including the type) the areas of ground colour distad of the postmedial line are reduced to two small patches, one beneath the first angle, the other distal to the fourth segment of the postmedial line; where distinct, fuscous marking connecting terminal and postmedial lines between M_1 and M_2 wedge-shaped, apex towards base of wing. Terminal markings of hindwing variable, usually connected to postmedial line between M_1 and M_2 ; postmedial line expanded above tornus, tornal patch sometimes extending somewhat towards antemedial line.

d genitalia: Valva with apex rounded; aedoeagus with two cornuti, one pointed; coremata of slender scales.

♀ genitalia: Ductus bursae with two sclerotized protuberances; signum crescent-shaped, somewhat angled centrally.

DISTRIBUTION. Angola, Belgian Congo, Northern and Southern Rhodesia, Nyasaland, Mozambique.

MATERIAL EXAMINED. BRITISH MUSEUM (NATURAL HISTORY): 13 paratype, N. Kivu, Belgian Congo, C.S., ii. 1928; 13, Port St. Johns, W. Pondoland, 1915, H. H. Swinney; 13, Chirinda Forest, Gazaland, 9.xii.1901, G. A. K. Marshall; 39, Mashonaland, Salisbury, Mar., Apr., Dec., 1904, G. A. K. Marshall; 13, Durban, iv. 1906, A. T. Cooke; 43, 39, Nyasaland, Mt. Mlanje, 7. iii, 7.v, 4, 17. xi. 1913, 19.i, 5.ii.1914, S. A. Neave; 19, Port E. Africa, E. of Mt. Chiperone, 2,200 ft., 23. xi. 1913, S. A. Neave; 13, Kitale, Kenya, 23. iv. 1925, G. W. Jeffery; 23, Elisabethville, Belgian Congo, C. S. 16. iii. 1934, 27. ii. 1935; 13, Angola, Mt. Moco, Luimbale, 1800-1900 m., 18 March 1934, Dr. K. Jordan. Musée du Congo Belge, TERVUREN: Holotype 3, 13 paratype, N. Kivu, Kissenyi, ii. 1928, Ch. Seydel; 13, 29, Eala, 18.vi, viii, ix.1935, J. Ghesquière; 19, Elisabethville, xii.1912, Ternest; 1δ, Elisabethville, 30.xi.1938, à la lumière, H. J. Bredo; 20δ, 6Ω, Elisabethville, 23.iii.1930, 3.v, 16.vi.1933, 29.iii.1934, 5.i, 27.ii, 19.xii.1935, i, 26.ii, 18.iii, 15.ix, 14.xi, xii.1936, i, 15.iii, 2, 27.xi, xii.1937, xii.1948, 22.i, ii, 19.xii.1949, 11, 14.iii.1950, Ch. Seydel. Zoologisches Museum, Berlin: 13, Verulam, Natal, Spiller, 19, Bagamoyo, v.93. Coryndon Museum, Nairobi: 23, Sinoia, S. Rhodesia, 21.ii.1950, N. Mitton; 13, 12, Broken Hill, N. Rhodesia, Feb. 1950, N. Mitton.

Pardomima (Pardomima) phalaromima (Meyrick)

(Text-figs. 9, 10, 26; Plate 23, figs. 8-10, 20)

Entephria phalaromima Meyrick, 1933. Exotic Microlepidoptera 4: 401-402.

Pycnarmon phalaromima Meyrick, Klima 1939. Lepidopterorum Catalogus 89: 26.

Lygropia amyntusalis Walker, Klima 1939. Lepidopterorum Catalogus 94: 227 (partim).

Pycnarmon phalaromima Meyrick, Ghesquière 1940. Ann. Mus. Congo belge C. (3[2]) 7 (1): 114.

Pycnarmon tabidialis Snellen, Ghesquière 1940. Ann. Mus. Congo belge C. (3[2]) 7 (1): 115.

Easily separated from all the other African species of the genus by the slender, pointed third segment of the labial palpi. The almost straight inner edge of the terminal fuscous markings is characteristic in the majority of specimens. The locality given in the original description should read "Luebo", not "Luelio".

3, \$\varphi\$ 18-26 mm. Third segment of labial palpus half length of second, slender, pointed; posterior margins of abdominal tergites often bordered with fuscous scales. Basal dots of forewing forming a basal line; antemedial line frequently expanded

on cubitus; discal dot curved, bar-shaped, connected to lower part of discal blotch along cubitus, thus enclosing a circular patch of ground colour; third segment of postmedial line broad, inner margin continuous towards apex with inner margin of apical patch; tornal patch of ground colour reduced to a small subquadrate area, or absent. Tornal patch of hindwing large, projecting towards antemedial line, costal margin following Cu_{1a}; apical patch large, angled to meet postmedial line. In extreme forms the entire dorsal and terminal areas of both wings may be fuscous.

d genitalia: Valva with apex rounded; aedoeagus without sclerotized cornutus;

scales of coremata slender, some with tips expanded, recurved.

♀ genitalia: Ductus bursae sclerotized for one-third of its length adjacent to ostium bursae; signum crescent-shaped, denticulate.

DISTRIBUTION. Sierra Leone, French Guinea, Ivory Coast, Nigeria, Cameroons,

Fernando Po, Angola, Belgian Congo, Nyasaland, Kenya, Tanganyika.

MATERIAL EXAMINED. BRITISH MUSEUM (NATURAL HISTORY): 29, West Africa, Sierra Leone, A. B. Frere; 8d 72 Bingerville, Ivory Coast, Nov. 1913, May 25-June 3, July 1–14, 28–31, Aug. 1–5, 5–7, 14–18, 25–30, Sept. 8–11, 1915, G. Melou; 19, Lagos, H. Strachan; 13, 19, R. Niger, Sapele, F. W. Sampson; 19, Old Calabar, F. W. Sampson; 12, S. Nigeria, Ilesha, L. E. H. Humphrey; 12, Degama, Niger, Dr. Ansorge; 103, 102, Warri, iv, v, vi, vii, viii, ix, 1897; 13, Fernando Po, Rev. J. Nicholls; 13, Pundo Andongo, Angola, Dondo, 24.ii.1875, A. v. Homeyer; 13, Johann-Albrechts Höhe Station-Kamerun, L. Conradt, 1896; I, Congo R., 16 Sept. 1922, Congo Belge; 23, 29, Nyasaland, Mt. Mlanje, 18.iii, 24.iv, 11.vi.1913, 6.ii.1914, S. A. Neave; 12, Kenya, Meru Dist., Mt. Kenya, Sept. 1930, Mrs. H. Young. Muséum d'Histoire Naturelle, Paris: 12, Brazzaville; 12, Bingerville, Côte d'Ivoire; 12, Afr. Or. allm. Kilimandjaro, 800 m., Neu Moschi, iv. 1912; 23, Nimba, Guinée, vii-xii. 1951. Musée Royal d'Histoire Naturelle, Brussels: 13, P.N.A., Lac Magera, 2000 m., 26.ii-7.iii.1934, G. F. de Witte. Musée du Congo Belge, Tervuren: Holotype 3, Luebo, iv. 1931, C. J. Colin; 43, 12, Eala, vi, ix, x, xi. 1936, J. Ghesquière; 13, Kinchassa, Nov. 1896, Waelbroek; 13, Kinsala, Tombolo, x.1921, L. Verlaine; 13, Yangambi, x.1939, Henrard; 13, Kafakumba, iv. 1929, G. F. Overlaet; 13, Sankuru, Dimbelenge, 11. ix. 1951, Dr. M. Fontaine; 13, Equateur, Bamania, 1936, R. P. Hulstaert; 13, Buja, 4.vi.1912, Dr. Christy; 13, Lisala, 8.ii.1906, Waelbroek. Zoologisches Museum, Berlin: 13, Kamerun, Mokundange, 1-15. viii. 1905, G. Tessmann; 19, Kamerun, Jaunde-Stat., 800 m., Zenker.

Pardomima (Pardomima) telanepsia sp. n.

(Text-figs. 11, 12, 19, 29; Plate 23, figs. 4, 5)

Differs from *phalaromima* in the much shorter third segment of the labial palpi and the configuration of the terminal markings of the wings. Separated from *distortana* in the male by the possession of a pale lateral streak on the eighth segment, and non-specialized mid-femora, in the female by the restriction of the ground colour area below the cubitus of the forewings to one-half the distance between the antemedial and postmedial lines.

 δ , \bigcirc 18–24 mm. Thorax and abdomen ochreous-grey, markings fuscous. Wing markings similar to *phalaromima*, but patches of ground colour of forewing distad of third and fourth segments of postmedial line wedge-shaped, narrow, apices towards each other, corresponding markings of hindwing similar.

of genitalia: Length of valva twice breadth, apex rounded; aedoeagus with two cornuti, one diamond-shaped; coremata with both simple and compound, light and dark, scales, some of the light scales clubbed at the tip, or at intervals along the

length of the scale, compound fuscous scale not divided at tip.

9 genitalia: Ductus bursae sclerotized from ostium bursae for one-half of its length, where there is a rounded sclerotized protuberance, sclerotization continued for a short distance along ductus seminalis; sigma crescent-shaped, exceeding half the circumference of a circle.

DISTRIBUTION. Ivory Coast, Gold Coast, Nigeria, Fernando Po, French Equatorial Africa.

MATERIAL EXAMINED. BRITISH MUSEUM (NATURAL HISTORY): Holotype &, Fernando Po, W. Cooper; allotype Q, Bingerville, Ivory Coast, 1915, G. Melou; 4& paratypes, Fernando Po, Moka, 28.i-3.ii.1933, W. H. T. Tams; Sapele, R. Niger, F. W. Sampson; Kamerun, Lolodorf, 24.ii.1895, L. Conradt; 1&, 2Q, Warri, vii, viii, ix.1895, Dr. Roth; 1&, Gold Coast, N. Territories, Kete-Krachi, A. W. Cardinall. Muséum National d'Histoire Naturelle, Paris: 1&, Oubangui-Chari, Tchad, Bangui.

Pardomima (Pardomima) zanclophora sp. n.

(Text-figs. 13, 14, 20, 27; Plate 23, figs. 11-13)

Lygropia amyntusalis Walker, Klima, 1939. Lepidopterorum Catalogus 94: 227 (partim). Dichocrocis phalarota Meyrick, Ghesquière, 1942. Ann. Mus. Congo belge C. (3[2]) 7(2): 140–141 (partim).

Very closely allied to *azancla*, but lacks the distinct projection of tornal patch towards antemedial line of the hindwings of that species. The hooked cornutus of the male aedoeagus separates it from all other African species. The irregular outline of the protuberance of the ductus bursae of the female separates it from *azancla*.

3, \$\text{Q}\$ 21-27 mm. Head, thorax and first two abdominal segments typically ochreous-yellow, remaining abdominal segments tinged with orange, markings fuscous, distinct; posterior margins of abdominal terga 3-6 bordered with shining scales. Basal dots of forewing usually confluent; discal dot usually separate from antemedial line; a projection from the lower part of discal blotch may extend along cubitus towards, but not reaching, the discal dot; dorsum between antemedial and postmedial lines almost always suffused fuscous; second and third segments of postmedial line broad, prominent; apical and tornal patches large, variable in extent. Hindwing with apical blotch not reaching postmedial line, tornal patch not extending towards antemedial line, except in a very few examples where it is diffuse.

3 genitalia: Length of valva more than twice breadth, apex somewhat pointed, a slender, pointed projection from inner surface; aedoeagus with a single hooked or sickle-shaped cornutus; coremata with both simple and compound fuscous scales,

tips of some of the simple scales clubbed.

♀ genitalia: Ductus bursae sclerotized adjacent to ostium bursae, expanded to form a protuberance of irregular outline; signum crescentic, minutely denticulate.

DISTRIBUTION. Belgian Congo, Mozambique, Tanganyika, Kenya, Grand Co-

moro, Madagascar, Ethiopia, S. W. Arabia.

MATERIAL EXAMINED. BRITISH MUSEUM (NATURAL HISTORY): Holotype &, allotype Q, Suna, S. Kavirondo, January 1932, W. Feather; 13, 19 paratype, Suna, S. Kavirondo, February 1932, W. Feather; Kibwezi, B.E.A., Nov. 1920, W. Feather; 29, Dar-es-Salaam, T. T., vi. 1914, A. Loveridge; 13, Kilwa, Germ. E. Africa, II.ii.1900, Reimer; 13, G. E. Africa, Usangu Distr., Ft. Kifulufulu Mtn., 3000 ft., 17. xii. 1910, S. A. Neave; 12, Delagoa Bay; 12, Kenya Colony, Voi Plantations, 20.ii.1912, C. Montagu Smyth; 13, Kenya, Kedai, 8.xii.191, Fawcett; 19, Grand Comoro, Sept., 1921, G. F. Leigh; 29, Grande Comore, L. Humblot, 1884; 13, Sakaramy, N. E. Madagascar, 16 Feb. 1917, G. Melou; 63, 49, Diego Suarez, Madagascar, 24. xii. 1916, 5, 19, Feb., March-April, 1917, G. Melou; 19, Arabia, Harabrab, 3.i. 1937, H. St. J. B. Philby; 13, Dire Daoua, Abyssinia, December 1934, H. Uhlenhuth; 13, Diredaua, N. W. of Harar, 1914, G. Kristensen; 12, Elisabethville, Belgian Congo, C. S. II. x. 34. Muséum National d'Histoire Naturelle, Paris: 13, 19 paratype, Afr. or. Allm., Kilimandjaro, Neu Moschi, 800 m.; Bura, Afr. or. Angl., Wa-taïta, iii. 1912, 1050 m.; 13, 12, Bura, iii. 1912, 1050 m.; 13, Afr. orient, Lagoa Bay; 13, Voï, Afr. or. Angl., mars 1911, 600 m. Musée du Congo Belge, TERVUREN: 38, 19 paratype, Equateur, Bamania, 14.ix.1936, R. P. Hulstaert; Elisabethville, 2.xi.1937, 4.ii.1938, Ch. Seydel; Uvira, x.1927, Ch. Seydel; 19, Rutschuru, v.1937, J. Ghesquière; 12, Elisabethville, 6.x.1934, Ch. Seydel. Zoologisches Museum, Berlin: 19, D. O. Afrika, Mkalama, 3.ii.1905, v. d. Marwitz. Coryndon Museum, Nairobi: 1♂, 1♀ paratype, Iringa, Tanganyika, iii. 1950, N. Mitton; 13, 12, Mtito Andei, Kenya, iii. 1950, N. Mitton.

Pardomima (Pardomima) azancla sp. n.

(Text-figs. 15, 16, 28; Plate 23, fig. 14)

Very closely allied to *zanclophora*, the formation of the tornal patch of the hind-wings is constant in the specimens examined. The genitalic differences outlined below give a ready means of separation.

3, 9 22–27 mm. Markings closely similar to zanclophora, especially to Madagascan examples of that species. Tornal patch of hindwings with a well-defined projection

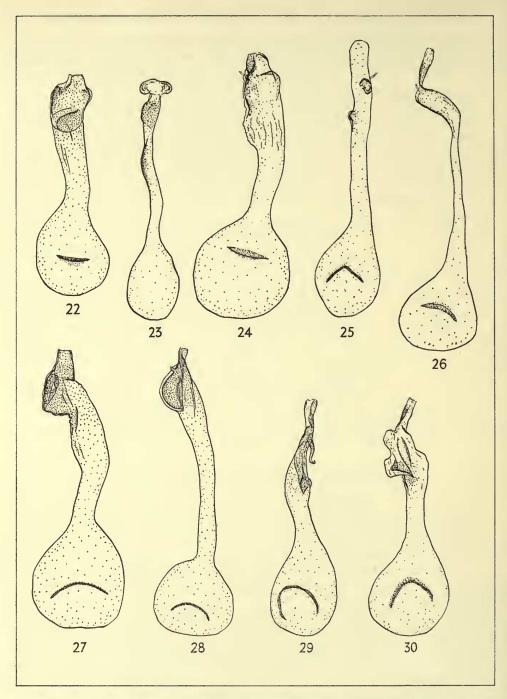
towards antemedial line.

d genitalia: Valva similar to zanclophora, rather more pointed at apex; aedoeagus with an apical bunch of small, slender, pointed cornuti; coremata similar, but with additional simple, blade-like fuscous scales.

♀ genitalia: Very similar to zanclophora, but protuberance of ductus bursae smoothly rounded.

DISTRIBUTION: Apparently confined to Madagascar.

MATERIAL EXAMINED. BRITISH MUSEUM (NATURAL HISTORY): Holotype &, allotype &, Diego Suarez, Madagascar, 5 Feb. 1917, G. Melou; 10&, 10& paratypes from type locality; 29&, 33&, from type locality; 1&, 5&, Nanisana, near Tananarivo,



Figs. 22-30. Pardomima (Pardomima): Female genitalia. Ductus bursae and bursa copulatrix. 22. P. testudinalis Saalmüller. 23. P. furcirenalis Hampson. 24. P. callixantha sp. n. 25. P. phalarota Meyrick. 26. P. phalaromima Meyrick. 27. P. zanclophora sp. n. 28. P. azancla sp. n. 29. P. telanepsia sp. n. 30. P. phaeoparda sp. n. All figures × 15.

Feb. 1932, Mme. N. d'Olsoufieff. Muséum National d'Histoire Naturelle, Paris: 19 paratype, Madagascar, Centr. Plateaux de l'Imerina, Parc de Tsimbazaza, 1200 m., 11. xii. 1951, P. Viette.

Pardomima (Pardomima) phaeoparda sp. n.

(Text-fig. 17, 18, 21, 30; Plate 23, fig. 15)

Superficially resembles dark forms of *phalaromima*, from which it may be distinguished by the shorter third segment of the labial palpi. It may be separated from the other African species by the presence of fuscous scales on the proboscis.

3, \$\times 23\text{-24 mm}\$. Secondary markings well-developed, ground colour pale whitish-yellow. Proboscis with fuscous scales. Thorax and abdomen mainly fuscous above, ground colour reduced to small spots. Basal line of forewing very broad, scarcely separated from antemedial line; discal dot large, connected to discal blotch along cubitus and on costa, enclosing a subtriangular patch of ground colour, a similar patch below cubitus; remainder of area between antemedial and post-medial lines fuscous; except for narrow streaks of ground colour immediately distad of first and fourth segments of postmedial line, and a faint spot above tornus, remainder of wing fuscous. Antemedial line of hindwing broad; terminal third of wing fuscous, except for two streaks of ground colour; tornal patch large, projecting towards antemedial line.

3 genitalia: Costa of valva strongly arched at base, apex rounded; aedoeagus with a medial bunch of slender, pointed cornuti; coremata with both simple and compound scales.

♀ genitalia: Ductus bursae sclerotized adjacent to ostium bursae, where it is expanded into a crumpled protuberance of irregular outline; signum crescent-shaped, denticulate.

DISTRIBUTION. Sierra Leone, Ivory Coast, Nigeria, Belgian Congo.

MATERIAL EXAMINED: BRITISH MUSEUM (NATURAL HISTORY): Holotype &, Sierra Leone, July 1904, Major Bainbridge; allotype &, Bingerville, Ivory Coast, 1915, G. Melou; 2& paratypes, Ogruga, Niger; Kassai district, Congo F.St., Taymans.

Subgenus PACHYPARDA n.

Differs from the typical subgenus as follows: 3 mid-femur enlarged, containing a cavity filled with ochreous-yellow hairs, an elliptical aperture on the inner surface (Text-fig. 43); valva of male large, costa irregular, with protuberances; coremata with both simple and compound scales; bursa copulatrix of female without signum. Typical markings of abdomen not well developed, pale lateral streak on eighth segment of male not well defined.

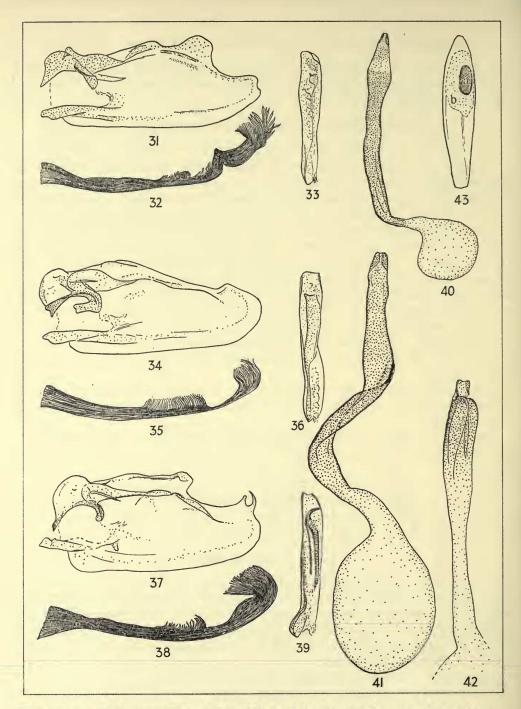
Type species: Pardomima distortana Strand.

DISTRIBUTION: West Africa and Belgian Congo.

Pardomima (Pachyparda) tumidipes (Hampson)

(Text-figs. 31-33, 40; Plate 23, fig. 16)

Sylepta tumidipes Hampson, 1912. Ann. Mag. nat. Hist. (8) 10: 6 (partim). Sylepta tumidipes Hampson, Klima, 1939. Lepidopterorum Catalogus 89: 211 (partim).



Figs. 31-43. Pardomima (Pachyparda): Male and female genitalia. 31. P. tumidipes Hampson, valva. 32. P. tumidipes Hampson, coremata scale. 33. P. tumidipes Hampson, aedoeagus. 34. P. margarodes sp. n., valva. 35. P. margarodes sp. n., coremata scale. 36. P. margarodes sp. n., aedoeagus. 37. P. distortana Strand, valva. 38. P. distortana Strand, coremata scale. 39. P. distortana Strand, aedoeagus. 40. P. tumidipes Hampson, ductus bursae and bursa copulatrix. 41. P. margarodes sp. n., ductus bursae and bursa copulatrix. 42. P. distortana Strand, ductus bursae and bursa copulatrix. 43. P. distortana Strand, inner surface of mid femur of male, showing the aperture (a) and the extent of the cavity containing hairs (b). Figures 31-42. × 15; figure 43, × 7½.

Dichocrocis phalarota Meyrick, Ghesquière, 1942. Ann. Mus. Congo belge C. (3[2]) 7 (2): 140-141 (partim).

Distinguished from *margarodes* and *distortana* by the shape of the area of ground colour between the two terminal patches of the hindwings.

- 3, \$\times 20-22\$ mm. Head, thorax and abdomen ochreous-white, tinged with ochreous orange, second abdominal tergum with three fuscous dots, seventh with two fuscous dots; genital capsule of male mainly ochreous-white. Forewing very similar to that of telanepsia, but discal dot not connected to discal blotch along cubitus. Hindwing similar to that of telanepsia, but apical patch not connected to postmedial line; tornal patch more diffuse; area of ground colour between terminal patches parallel-sided.
- 3 genitalia: Costal margin of valva with large rounded protuberance at two-thirds, apex of valva concave; aedoeagus with a single, weakly-sclerotized, sub-circular cornutus with a short apical pointed projection, and a slender tapering continuation towards base; coremata with both simple and compound, light and dark scales.

♀ genitalia: Ductus bursae sclerotized throughout length; bursa copulatrix rather small.

DISTRIBUTION. Sierra Leone, Gabon, Belgian Congo.

Material examined. British Museum (Natural History): 13 syntype, Sierra Leone, 28.4.1895, Clements; 13, Sierra Leone, Hill Station, M. Frere; 13, Abanga R., Gabon, Oct. 1897, Dr. Ansorge. Musée du Congo Belge, Tervuren: 12. Manghay, 27.x.1921, L. Verlaine.

TYPE MATERIAL. BRITISH MUSEUM (NATURAL HISTORY): The two & syntypes described by Hampson belong to two species. One is referable to distortana Strand; the other, listed above, is here designated lectotype.

Pardomima (Pachyparda) margarodes sp. n.

(Text-figs. 34-36, 41; Plate 23, figs. 17, 19)

Very closely allied to *distortana*; distinguished from it by the lighter colour and lesser extent of the fuscous markings; the areas of ground colour distad of third and fourth segments of postmedial line of hindwings of about equal extent.

\$\delta\$, \$\times 22-27\$ mm. Head, thorax and abdomen ochreous yellow; second and seventh and in male eighth, abdominal terga often with fuscous scales. Wings with a pearly sheen, not violaceous as in distortana. Markings similar to those of tumidipes, lines and patches often with crenulate margins. Area between tornal and apical patches of hindwing not parallel-sided, outer margin curving inwards to meet inner towards costa.

d genitalia: Costal margin of valva with a protuberance at one-third, stepped outwards at four-fifths; aedoeagus with a single, broad, weakly sclerotized cornutus bearing a short, latero-distal projection.

Q genitalia: Ductus bursae sclerotized throughout length, twisted, compressed, a series of heavily sclerotized, opaque, prominences along margin so formed; bursa copulatrix large.

DISTRIBUTION. Southern Nigeria.

MATERIAL EXAMINED. BRITISH MUSEUM (NATURAL HISTORY): Holotype 3, allotype 2, Warri, v, vi, 1897, Dr. Roth; 103, 102, paratypes from type locality; 23, 72 from type locality; 13, Akassa-Onitsha, R. Niger, Dr. Cook.

Pardomima (Pachyparda) distortana (Strand)

(Text-figs. 37-39, 42, 43; Plate 23, figs. 18)

Sylepta tumidipes Hampson, 1912. Ann. Mag. nat. Hist. (8) 10: 6 (partim).

Lygropia distortana Strand, 1913. Arch. Naturgesch. 78 (A12): 75.

Sylepta tumidipes ab. hampsoniana n., Strand, 1917. Arch. Naturgesch. 82: (A3): 10.

Conogethes empalacta Meyrick, 1937. Exotic Microlepidoptera 5: 104.

Pycnarmon empalacta Meyrick, Klima, 1939. Lepidopterorum Catalogus 89: 25.

Sylepta tumidipes Hampson, Klima, 1939. Lepidopterorum Catalogus 89: 211 (partim).

Lygropia distortana Strand, Klima, 1939. Lepidopterorum Catalogus 94: 229.

Syllepta tumidipes Hampson, Ghesquière, 1942. Ann. Mus. Congo belge C. (3[2]) 7 (2): 152.

Very closely allied to *margarodes*. The reduction or absence of the area of ground colour above tornus of the forewings is characteristic; the name ab. *hampsoniana* could be used for those specimens in which this area is absent.

3, \mathcal{Q} 23–27 mm. Abdominal terga of male mainly fuscous, of female mainly ochreous-orange. Very similar to *margarodes*, but markings darker and more intense, wings with a violaceous pearly lustre. Terminal areas of both wings more heavily marked than in *margarodes*, area of ground colour distad of third segment of postmedial line of forewing smaller than corresponding area adjacent to fourth segment, or absent; corresponding areas of the hindwing similarly reduced.

& genitalia: Costal margin of valva with a rounded protuberance at two-thirds, two slender projections near apex, the inner blunt, the outer pointed, almost enclosing a sub-circular area; aedoeagus with a row of slender, pointed cornuti and a large, curved thorn-like cornutus; coremata with both simple and compound, light and dark scales.

♀ genitalia : Ductus bursae sclerotized near ostium bursae only ; bursa copulatrix large.

DISTRIBUTION. Sierra Leone, Ivory Coast, Gold Coast, Nigeria, Cameroons, Rio Muni, Gabon, Belgian Congo.

MATERIAL EXAMINED. BRITISH MUSEUM (NATURAL HISTORY): I & (syntype of P. tumidipes Hampson), Sierra Leone, 12.xi.1895, Clements; 1&, 1\top, Sierra Leone, Dr. Cator; 1&, Sierra Leone, A. B. Frere; 22&, 40\top, Bingerville, Ivory Coast, June 13–15, July 1–11, 28–31, Aug. 11–25, Sept. 1–15, 1915, G. Melou; 2&, Assinie; 1&, Aburi, Gold Coast, 1912–1913, W. H. Patterson; 2& (ab. I. of tumidipes Hampson, subsequently named by Strand ab. hampsoniana), Coomassie, Whiteside, and R. Niger, Sapele, F. W. Sampson; 3&, Warri, v, vi, vii, 1897, Dr. Roth; 1&, S. Nigeria, Ilesha, L. E. H. Humfrey; 5&, 2\top, Bitje, Ja River, Cameroons, 2,000 ft., Bates; 1&, Afr. Occid, Johann-Albrechts Höhe, Station Kamerun, 1898, L. Conradt; 2&, Lake Ansebbe, Fernan-Vaz, Gabon, Feb. 1908, Dr. Ansorge; 2&, Abanga R., Gabon, Oct. 1907, Dr. Ansorge. Musée Du Congo Belge, Tervuren: 1& (type of P. empalacta

Meyrick, Lulua: Kapanga, xii. 1933, F. G. Overlaet; 13, Kafakumba, xii. 1932, F. G. Overlaet; 12, Bitye, Bates-Rosenberg. Zoologisches Museum, Berlin: Holotype 2, Span, Guinea, Benitogbt., Alén, 1–15.ix.1906, G. Tessmann; 23, Ogowe, Lambar., Moq.

SUMMARY

Twelve species of the genus *Pardomima* are here described, included in two subgenera; six of the species and one subgenus are described as new. Many of these species have been confused hitherto under the name "Lygropia amyntusalis Walker". None of the previously described species has hitherto been included in the genus *Pardomima*; they are listed below with the generic names under which they are placed in the *Lepidopterorum Catalogus*:

Pycnarmon: phalaromima Meyrick; empalacta Meyrick (= distortana Strand), new

synonymy.

Lamprosema: furcirenalis Hampson.

Lygropia: testudinalis Saalmüller (ex synonymy); phalarota Meyrick; distortana Strand.

Sylepta: tumidipes Hampson.

